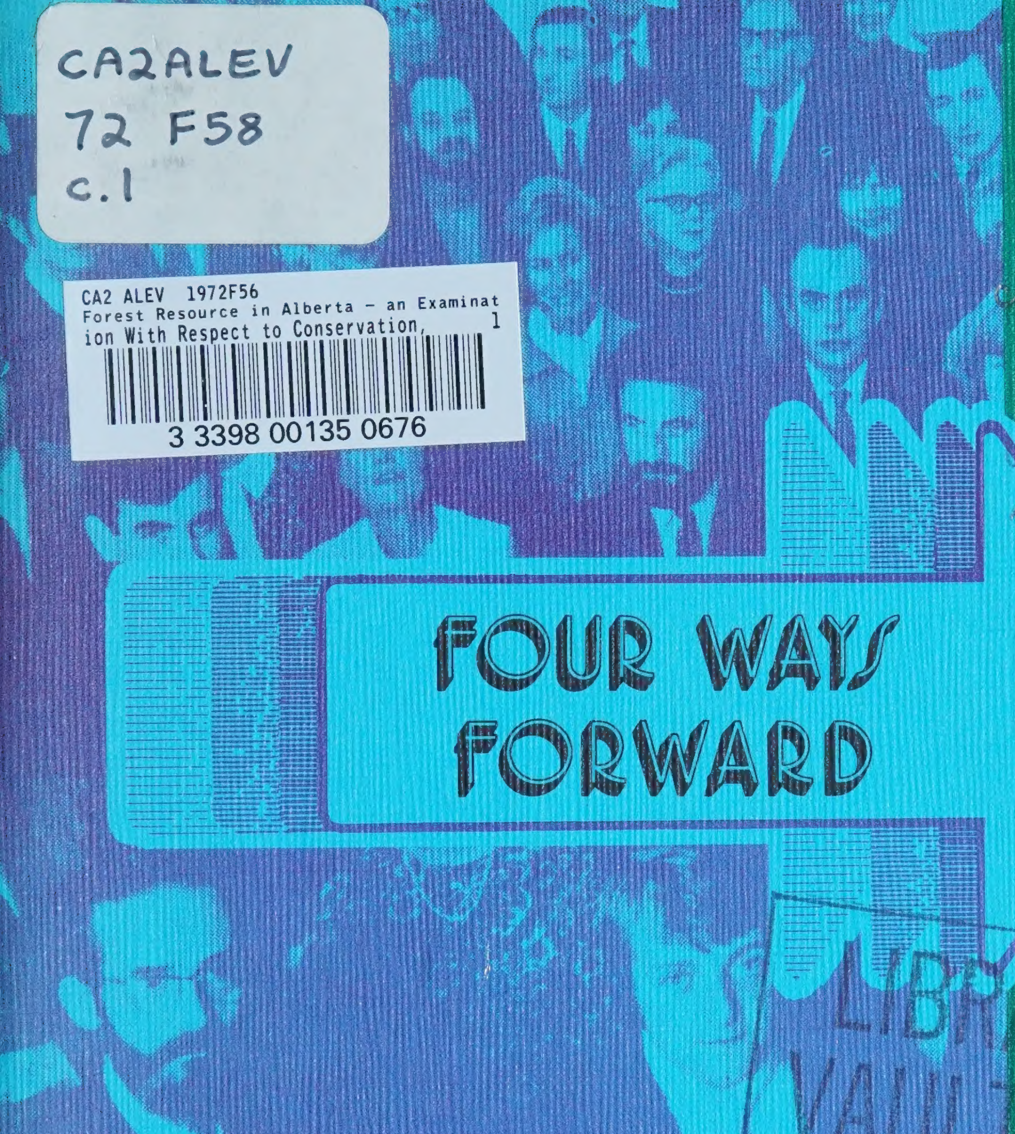
CA2ALEV
72 F58
c.1

CA2 ALEV 1972F56
Forest Resource in Alberta - an Examination With Respect to Conservation, 1
3 3398 00135 0676



FOUR WAYS FORWARD

Managing Our Environment

LIBRARY VAULT 19

Alberta.
ENVIRONMENT CONSERVATION AUTHORITY

edmonton, alberta

Digitized by the Internet Archive
in 2024 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

MAR 13 1973

education
management
economics
legislation

MANAGING our ENVIRONMENT

ENVIRONMENT CONSERVATION
AUTHORITY
edmonton, alberta

COPIES OF THIS REPORT MAY BE OBTAINED
UPON REQUEST TO

ENVIRONMENT CONSERVATION AUTHORITY
9912 – 107th STREET · EDMONTON, ALBERTA · T5K 1G5 ·
TEL. (403) 423-2247

OCTOBER, 1972

FOREWORD

The Environment Conservation Act was passed by the Alberta Government in 1970, creating the Environment Conservation Authority as a corporation with broadly framed advisory responsibilities for environmental matters.

The "FOUR WAYS FORWARD" is taken from the First Annual Report (1971) of the Environment Conservation Authority, a copy of which may be obtained upon request.

In presenting the "FOUR WAYS FORWARD" the Authority has attempted to outline the philosophy and practice of public participation and to describe the four main avenues through which it believes a better relationship with the environment can be achieved for all Albertans.

DR. W. R. TROST, Chairman.
MR. P. BABEY, Vice-Chairman.
DR. S. B. SMITH, Member.

Digitized by the Internet Archive
in 2024 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

https://archive.org/details/ableg_33398001350676

THE PHILOSOPHY AND PRACTICE OF PUBLIC PARTICIPATION

An important emphasis in the Environment Conservation Act is on public participation in the formulation of policies related to natural resources and environmental management. The concept of public involvement in decisions of Government has evolved steadily over many centuries in democratic societies.

The democratic process is, however, neither simple nor unchanging. With increases in populations and a more structured society, the role of the individual has often been suppressed and that of groups has become enhanced. Public aspirations are often reflections of abstract goals such as freedom, justice and quality of life, but they do not identify functional guidelines for policy formation and implementation of programs.

Changes in public attitudes have created a strong public demand for a larger share in policy formulation. What is needed, therefore, are mechanisms which enable the preferences of the public at large to be identified in terms of the obvious need to channel public energy into policy formulation. This can be assisted by making available to the public as much information as possible on the subject of concern, as well as by inviting a comprehensive and wide-ranging public response, based on that information. Structures and mechanisms need to be established to provide the essential link between public aspirations, policy formulation and program implementation.

It seems probable that at least the Western world has now gone through the first phase of one of the changes in respect of man's relationship to the environment that public participation can bring about. Largely through the activities of individuals and associations of individuals who were deeply concerned with the environmental implications of man's way of life, and after much dialogue and controversy, perhaps a majority has come to favor an attitude of environmental concern.

The first phase may have been easy. A relatively small fraction of society was able to win broad support for a general thesis. In the next phase, sensible and practical attempts will be needed to define the new objectives and to reach them. The need and role for public participation therefore will become both more acute, required from a larger percentage of the population, and be on a more formal base.

GUIDELINES FOR PUBLIC PARTICIPATION

Individuals participate in many ways in determining their future and in safeguarding the rights and interests of generations yet to come. Many people now agree that it has become more important that all individuals participate towards winning and maintaining a successful position for human society within its environment.

For public participation to be meaningful in the formulation of public policies in a democratic society, the following guidelines are suggested.

(1) Practical means should be made available whereby individuals, groups, associations, companies and corporations can fully and freely develop and publicly express their points of view.

(2) To the extent that it is possible, the public should be given the opportunity to express its point of view on the basis of up-to-date and correct factual information.

(3) When public opinion is divided about policy issues, means should be provided to facilitate the exchange of views between opposing parties on both a public and a private and a formal and informal basis, with provision made for the input of objective data and information.

(4) The principle of public accessibility to the Government should apply. That is to say, for public participation to complete itself, the views that have been developed within the public area should be given access in a public way to elected representatives and the Ministers of the Crown.

(5) Any instrument or device used to bring about public participation should itself be generally nonpartisan, without vested interests in the issues under discussion, and at arm's length from Government itself. The Authority takes itself to be such an instrument.

SOME TECHNIQUES IN PUBLIC PARTICIPATION

The philosophy of open government is one thing. The problem of how to bring public participation about in a reasonably affective way in particular circumstances is quite another.

The Authority has been given responsibility to encourage public participation in matters relating to environment conservation. Towards this end the Authority encourages informal and unstructured contacts but also establishes formal procedures. These include (a) public advisory committees, (b) science advisory committees, (c) public hearings, and (d) public opinion sampling techniques.

PUBLIC ADVISORY COMMITTEES

The Authority is empowered to appoint one or more public advisory committees on environment conservation and prescribe the duties and functions of such public advisory committees. The objectives of a committee may be long term and continuing, specific and finite, or set up for a special purpose. In its first year, the Authority appointed three committees, one in each category. They are the Public Advisory Committee on the Environment, the Public Advisory Committee on the Conservation of Archaeological and Historical Resources and the Public Advisory Committee on Environmental Education. In addition, a Public Advisory Committee on the Environmental Sciences acts in a special way to provide scientific advice to the Authority on environmental matters.

THE PUBLIC ADVISORY COMMITTEE ON THE ENVIRONMENT

The Public Advisory Committee on the Environment is deemed to be the principle instrument developed by the Authority to bring about participation from the public in a continuing way through the Authority on matters of policy, in the determination of environmental objectives and in respect of specific environmental problems that affect the public interest.

In setting up the Public Advisory Committee on the Environment, the Authority took the view that membership on it should be broadly representative of all sectors of the public, and that appointment to it should be by nomination from public organizations, groups, and institutions, rather than through selection by the Authority itself. Accordingly, membership in the Committee was sought through nominations from each of sixty-five organizations, institutions, and groups, representing several hundred thousand citizens. Representation from additional organizations may be sought as time passes.

The Public Advisory Committee on the Enviroment is meant to have considerable autonomy. It establishes its own system of sub-committees and working groups and elects its own officers, and meets jointly with the Authority at least once a year. A Coordinating Committee, comprised of the Chairmen of the Sub-Committee and Working Groups, acts to coordinate the overall work of the Committee, and meets with the Authority as need arises. The annual reports and recommendations of the Public Advisory Committee on the Environment, which is their formal advice to the Authority, are public documents.

THE PUBLIC ADVISORY COMMITTEE ON THE CONSERVATION OF ARCHAEOLOGICAL AND HISTORICAL RESOURCES

After representation from the Canadian Archaeological Association and at the suggestion of the Premier of Alberta and of the Minister of Culture, Youth and Recreation, the Environment Conservation Authority agreed to establish a Public Advisory Committee on the Conservation of Archaeological and Historical Resources. Its task was to investigate the need for and make recommendations regarding appropriate legislation and administrative mechanisms for assuring adequate protection to historical and archaeological resources in Alberta. The work of this Committee is cited here as an example of a public advisory committee used to reach a specific objective in a finite time. The initial impetus for its formation arose directly from the public sector, and it will be disbanded when its task is completed.

THE PUBLIC ADVISORY COMMITTEE ON ENVIRONMENTAL EDUCATION

The proposal is widely held that environmental education must play a fundamental role if society is to establish an enlightened human eco-system on earth. This view has been presented to the Authority many times in many forms by groups and individuals. It is a view also firmly held by the Authority. The question remains as to what environmental education may be, and how the techniques of education may best be used.

After discussion with the Cabinet, with the Council of Directors of the Department of Education, and with many public groups, the Authority formed the view that the emphasis on education would appropriately be met by setting up a Public Advisory Committee on Environmental Education.

It is envisaged that the Committee on Environmental Education, beginning initially with eight members, will expand its membership and its activities so that suitable attention can be given to all age groups and educational levels in which improved environmental understanding and technical training might be helpful.

The objectives of this Committee therefore are rather broad and may become even more comprehensive in the short-run, although it is conceivable if not probable that it could achieve its mission in a limited period of time and then either dissolve itself or perhaps become a subcommittee of the Public Advisory Committee on the Environment. In the meantime, joint meetings of the two committees are held as the need arises.

This Committee can be cited as one with both a very broad and highly specialized term of reference, brought into being by both broad and special pressures from the public.

THE PUBLIC ADVISORY COMMITTEE ON THE ENVIRONMENTAL SCIENCES

A somewhat different opportunity for public participation is made available through the Public Advisory Committee on the Environmental Sciences. It differs from the others in that its membership is drawn from those members of the public who are highly trained and have special recognized expertise in some discipline touching on the environment. Science is therefore used in its broad sense, to include the social sciences like economics, law, and sociology, as well as the pure and applied disciplines in the biological and physical sciences. Membership has initially been drawn from the three Universities, the Research Council of Alberta and from industry.

The Authority appreciates the enthusiasm and the interest these scientists have shown in the problems of the environment, and their willingness to give of their time on a voluntary basis to the work of the Committee. The Authority believes that the contribution that the Science Advisory Committee can make to the process of public participation is substantial and has a distinctive flavour and purpose.

Many problems relating to the environment have specialized and difficult scientific and technical components, For a proper presentation to the public as a whole, the Authority believes it will be helpful if such problems are first analyzed by the experts in interdisciplinary conclave. Hopefully, a clarification of the scientific and technical background to these problems will enable subsequent public discussion on the main issues to be more fully developed. The Science Advisory Committee will tend to be used as a spearhead to formulate problems that now seem of longer range, helping to define them so that informed public discussion can ensue as time passes. It is understood that the contributions of the Science Advisory Committee need not necessarily be limited to long range matters, for difficult scientific, economic and technical problems are also to be found in immediate short-term problems that involve the public.

PUBLIC HEARINGS

Public hearings may have had as long a history within the democracies as have had committees and councils, and now take many forms. Hearings can be informal inquiries at which individuals or representatives of groups can make such representations as they wish in written or oral form on any subject. At the other extreme, hearings can be very formal and approach closely the procedures and even the atmosphere of a court room with legal counsel and with organized questioning and cross examination under close rules of procedure. The Environment Conservation Authority will conduct public hearings of more than one kind, depending upon the task or the objective that has been set.

The Authority must hold public hearings when requested to do so by the Lieutenant Governor-in-Council. These can be short-term and urgent, particularly if associated with legislation that is pending. They can be long-term and continuing if associated with the definition of long-term goals and objectives. The Authority is also required to hold public hearings on appeals to "Stop Orders" issued by the Minister of the Environment.

It is now permissive for the Authority to hold public hearings on petitions from the public, but consideration is being given by the Minister of the Environment to ways in which the public could compel the Authority to hold a public hearing on a particular subject. This would further strengthen the public role.

The Authority has held or, at the request of the Minister is arranging to hold, public hearings on the following subjects:

(1) The Restoration of the Levels of the Lakes in the Cooking Lake Moraine Watershed Area.
(2) Impact on the Environment of Surface Mining for Coal.
(3) Conservation of Archaeological and Historical Resources.
(4) The Environmental Effects of the Operation of Sulphur Extraction Gas Plants.
(5) Land Use and Development Within the Canmore Corridor.
(6) Impact on the Environment of Forest Utilization.
(7) Reclamation and Development of the Crows Nest Area.
(8) Regulated Development Within the Strathcona Industrial Corridor.
(9) The Environmental Effects of the Use of Insecticides, Pesticides and Hard Chemicals.
(10) Impact on the Environment of Oil and Gas Exploration, Development and Transportation.

To bring about well balanced hearings it is necessary that all relevant points of view be heard, and that all participants have suitable and sufficient access to the facts of the case.

It is also important that the hearings be held in the proper context, and that the proper basis of fact, information and terms of reference for the hearing be made available to the public well in advance of the hearings.

The Authority encourages its Public Advisory Committees and the organizations represented on them to take part in the public hearings. It also invites submissions from all other interested groups and organizations and individuals who are known to have an interest in the subject under hearing. The Authority also believes it most important that those citizens and organizations whose livelihoods or well being are affected by the subject of the hearing should be given every opportunity and encouragement to make their case well known. This includes cities and towns, industries, management, labour, the farming community, and so on.

The Authority will report on its hearings in three ways.

(1) A complete written transcript of the hearings, including copies of the written submissions, will be published as a public document at a nominal cost.
(2) A concise and objective summary of the hearings will also be published and made available.
(3) The report containing the recommendations of the Authority to the Minister and to the Lieutenant Governor-in-Council will be prepared as a document for release by the Minister.

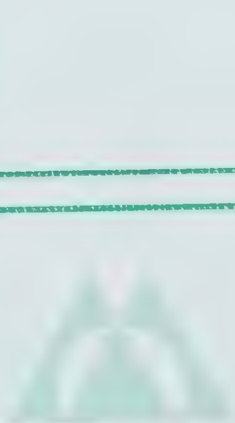
Public hearings can be important educational forces in society. To the extent that they achieve a well balanced presentation of the public view, and are factual and well informed, they can also serve as helpful aids to government. Sometimes special efforts may be needed to attain these ends.

PUBLIC OPINION SAMPLING TECHNIQUES

Public hearings, and perhaps any public debate that depends on voluntary contributions may not necessarily have all views represented or given proper weight. The Authority therefore considers it useful to use public opinion sampling techniques to measure the responses of the public on a statistical basis to the issue under discussion. This is particularly useful in subjects that have been exposed to public hearings since it gives an additional background of information as to the response of those persons who did not make representation at the public hearings as well as those who did.

Public opinion sampling techniques sometimes bring out attitudes in the public that are relevant, significant, and bear on the question, but were not previously expressed. The limitations of public opinion sampling methods must always be borne in mind. Perhaps the simplest limitation is that the view and judgement of the public changes as time passes, but the Authority believes that public opinion sampling techniques may serve in some cases as corroborative or check-point information as against the other ways through which it is seeking to develop a participation from the public at large.

THE
FOUR WAYS
FORWARD



It may be that society is just now emerging from a substantial re-evaluation of how it fits as a species into the world as a whole. After a period of confusion, skepticism and sharp controversy as to whether or not man was creating excessive damage to his environment, or even if his future on earth were to be short or long, there are indications that a kind of consensus is emerging. Do not all governments and all political parties now urge the same objective, namely, the restoration and maintenance of an environment best suited to man and other forms of life now and for the future? Indeed, do we not all quite generally agree that there is a need for the development of policies for the management of the environment, which would take into account the dynamics of life, the requirements of man and the resources available, and that the time has come for a rational approach to these objectives?

If a consensus has been set as to the general objective, what now remains are the mechanics of achieving it, the emphasis that is to be placed on different broad approaches, the identification of priorities, and an assessment of the interdependencies and urgencies associated with the several tasks.

In respect of the broad approaches, the Environment Conservation Authority has the general view that environmental management, environmental education and environmental legislation with a broad and general emphasis on environmental economics, including the economics of living processes, together provide the major avenues into the future.

ENVIRONMENTAL MANAGEMENT

With the great increases in human population, and with the very considerable increases in resource consumption by individuals that the recent past has seen, the total impact of the human species has, it is often said, tested the capacity of the biosphere to absorb the wastes of man. At the same time, some of the ancient knacks man had of conserving his environment have been abandoned or have become impractical for an individual to implement. The great movement of people from the farms to the cities has undoubtedly enlarged the scope and concentrated the impact of environmental problems.

In a way, the cure seems simple. Many changes and advances have occurred quickly in society. It may only be necessary now to invent and introduce, or re-introduce, such sound environmental practices as are required to restore equilibrium in an environment that has undergone many substantial, sharp and unexpected changes. The extra new problem, however, seems to be that we must now also manage man. There are several aspects to such a question.

ENVIRONMENTAL TECHNOLOGY

It is probably true that environmental problems have been made more acute by the quick inroads a rapidly developing scientific technology has enabled us to make into the physical resources of the world. It is hoped that this same ingenuity will help us to invent ways to manage the processes that now support us in such a way as to minimize or eliminate their undesirable side-effects. There are at least two parts to this problem. One has to do with the processes themselves and the other has to do with the people who control the processes. Both of these have strong educational as well as management components. The two together will produce the new environment technology that will be needed if proper environmental management is to be achieved.

NEW ENVIRONMENTAL ENTERPRISES

The addition of an environmental management attitude to the conduct of industry will certainly produce some changes. Many new businesses will be created. Some of these will be new in kind, developing new technologies or new relationships between people and things. Many will be interdisciplinary, many highly specialized in areas not yet well developed. New business may be able to gain competitive advantages by introducing new processes that solve environmental problems in a superior way, and old established businesses may have to adapt, add new divisions and renovate as time passes.

ENVIRONMENTAL PLANNING AND INTEGRATION

Man's relations with man and with the earth's resources are changing at a pace difficult to comprehend. Powerful forces are acting concurrently to reshape the physical and social environments. Problems and pressures arise from changes in technology, new social attitudes, the growth of population and urbanization. Increased affluence and more leisure foster competing demands for finite resources. The future may well accentuate these trends.

One effect of these changes is to underline the interdependence of subjects that formerly were treated in a self-contained way. Another result is to emphasize the fundamental importance of anticipating the after-effects of present actions on life support processes, a fact vividly illustrated in the present conditions of many river, lake, delta and ocean systems of the world. Environmental management means pre-planning and integration of cause and effect, so that unfortunate consequences on living processes can be avoided.

HUMAN ECOLOGY AND ENVIRONMENTAL MANAGEMENT

It is probably true that the human species now dominates the earth and other living species in a way that no other animal has ever done same perhaps the dinosaurs, although plants may also have achieved a total dominance of the earth's surface in their time. The coal measures that underlie us are a present token of that past dominance by botanical species. Naturally our first concern is with our own species and with its future prospects. This is human ecology. We must so conduct ourselves through proper environmental management that our own species can be given assurance that its future will be healthy and secure. It is not an unnatural claim to make on one generation that it prepare and keep safe the future for the next generation and perhaps the generation after that as well. But because man is so overwhelmingly the dominant life species, it also falls on him without presumption to make provision for the future of living species other than his own. Indeed it may well be that his own survival will be so directly linked to such an act, that it will be a selfish act on his part, not merely an altruistic one.

It is altogether clear how directly man and other animals depend on the plant world. The plants manufacture the oxygen that man and animals must breathe if they are to live. Man also has vital and direct dependicies on other animal species. Consequently, in the statement that ecological considerations are basic to environmental management, the further statement that human ecology tends to include within itself all living systems, may only be a statement of simple human self-interest. It is in this sense, presumably, that one may say that environmental management assumes the maintenance of the human eco-system as its framework and responsibility.

ENVIRONMENTAL ECONOMICS

The economics of environmental management also has two parts to it. One has to do with the past, the other with the present and the future.

The past has undoubtedly left a legacy of environmental damage that has accumulated in the air, the land and the water, as well as in the form of the capital costs of old industrial plants that no longer meet contemporary standards. The cost of this legacy is substantial throughout the world, but a young mountain-bounded province is freer of these burdens than most. Our concern is more largely with the present and the future.

For the present and the future there are reasons to suspect that in new operations the costs though certainly real, may not in percentage terms be overwhelmingly large. In the first place, good environmental management will prevent many of the damages to people and property that are now borne as hidden costs and do not appear as costs in the product itself. Secondly, the environmental management costs borne by industry will no doubt somehow be passed on to the consumer where they will take their weight in the market place. Thirdly, in many cases it is to be expected that good environmental management will in fact improve returns, as it has in so many cases already, by reducing wastage, by increasing the range and novelty of by-products, by developing superior technology, by improved efficiencies through suitable recycling processes, and so on. Fourthly, and perhaps most importantly for us in Alberta, the requirements of environmental management will create new jobs and open up new employment opportunities for the working force.

It is sometimes estimated that the cost of environmental management may amount to about 5% of the costs of the finished product. Although this may seem a small percentage and is subject to wide variation, in large resource industries like those in our Province it still will finance the introduction of a considerable number of jobs as well as opportunities for an appreciable number of new business ventures to be launched. Moreover, since the cost of environmental management is going up at rather similar rates generally throughout the world, its impact on the market may not be competitively of overriding importance. Indeed, there are some grounds to suspect that the cost of legitimate environmental management, because of population densities, may be fractionally less in Alberta than in the United States, Europe and many of the Pacific Rim countries.

Both, therefore, in respect of entrepreneurs who have specific environmental enterprises in mind, and in respect of the general business advantages that environmental management may afford to the Province, it seems not out of place to suggest that thought be given to taking a business advantage out of the opportunities that environment conservation presents in relation to the development of resource industries in the Province and indeed in Canada as a whole.

One disadvantage to resource development in Alberta is the distance to markets and another is the slow rates at which the environment restores itself. Compared to the tropics we can claim a share of that environmental fragility the Artic is supposed to have. But we also have advantages. Assume the costs of environmental management to be passed on to the consumer. In respect of resource developments like coal, oil, gas and forest products, the business of environmental management will be done for the most part within Alberta. In a general way then since we export most of these products, the extra costs may also be exported. Therefore the economic returns of environmental management could accrue mainly to Alberta whereas their costs may, for the most part, be borne abroad. In brief, the result could be that a larger portion of the resource dollar would be kept at home. Of course markets must be retained.

ENVIRONMENTAL EDUCATION

In the last few years some of the more effective environmental education has been done by the informal educators, by associations that had an environmental orientation, by the anti-pollution groups and environmental activists, by the concerned groups and individuals who took it on themselves to carry the message to the people. We will need both formal and informal educators in the future.

WITHIN THE PUBLIC SCHOOL SYSTEM

The Public Schools could invent programs and curricula to help the young develop an awareness of the environment in contemporary terms, both as it applies to natural communities and to the complex organisms called cities. There is good reason to believe that these programs might produce favourable results at the elementary school level if introduced into the regular curriculum in social studies and in the biological sciences.

A further development could be within the regular course of studies at the junior high school and at the senior high school levels with proper attention being paid to the effect of the elective system as well as to budget constraints. Both elementary and high schools in the Province are already moving forward in these areas in an experimental way,with consideration being given to the possibility of using outdoor centres to assist in environmental programs.

AT THE POST-SECONDARY AND ADVANCED LEVEL

Part of the problem with environmental education is the extent to which new subjects should be introduced into the existing programs. This problem still remains at the post-secondary level but here the need appears more clearly for people trained in new ways and with new skills both in the junior colleges, and in the institutes of technology and the universities. This would meet the sometimes highly specialized problems that environmental management must solve, and the need for teachers of environmental programs in the school system.

CONTINUING EDUCATION

The task of helping the next generation is only part of the responsibility of environmental education, as has been well shown by the active environmental groups in the public area. Adults also need to have an exposure to the new concepts and to have the opportunity for their attitudes to the world that surrounds them to be changed and altered so that they may behave more appropriately. There is a role for continuing education both under the sponsorship of institutions and outside the institutions, by voluntary groups so that all sectors of society can be reached.

ENVIRONMENTAL EDUCATION WITHIN INDUSTRY AND GOVERNMENT

There is perhaps a specific requirement for what might be called in-house training within industry and within government. Employees could then be given suitable instruction so that the jobs they undertake or may be called upon to undertake can be conducted in an environmentally sound way. It may be that training programs in industry worked out in collaboration with institutes of technology might be a useful way for introducing the new techniques and controls that environmental management constraints may impose upon industrial processes.

ENVIRONMENTAL SELF-EDUCATION IN GROUPS AND IN SOCIETY

For some time self-education through participation and awareness in groups and in society may remain as the most direct and effective way of educating individuals. Part of the need here is to improve communications and improve the basis of fact upon which communications occur in these committed and enthusiastic groups.

ENVIRONMENTAL LEGISLATION

Legislation is often looked upon as a formal definition of the relationships that exist between government and those who are governed. Much new environmental legislation has been passed in the last two years. The introduction of completely new legislation, in which new formal definitions constrain the behaviour of citizens in areas where restraints previously had not existed, carries with it a special significance, particularly in a democracy. As a matter of fundamental importance, the first appearance of such new legislation indicates that a new consensus has formed or is forming up in the public mind. The new legislation then indicates that the democratic process is at work, trying to give a satisfactory expression to the new consensus.

Such processes may require much time and public discussion, particularly if matters affecting the livelihood and well being of citizens are involved, and if there are disputes as to how these might be balanced among the several conflicting interests.

An important stage is reached at the point of first consensus, the time when new legislation first appears. The consensus indicates not so much that all inputs have been resolved, but rather that new circumstances are impinging upon people and as they become aware of them through immediate and personal experience, the general view is reached that something must be done. Precisely what should be done is generally,at this point, still to be determined.

It is perhaps at this point that society has now arrived in respect of its relationship to the physical environment. Citizens, associations, businesses, know from their own experience that certain rationalizations and constraints on their own behaviour and the behaviour of others as they affect the environment are needed in the best interests of all. But precisely what these restraints should be, how they will affect specific interests and enterprises, who will win and who will lose are, at least partly, still open questions. This is an opportune time for legislation to be introduced.

New legislation in its turn has different testing points, and should be returned to the public in a democratic society for pragmatic evaluation at each of them. There is first the point where the legislation is formed and passed, then when regulations supporting the legislation are created, and finally, when enforcement procedures are adopted and experienced.

Each of these testing points has its own kind of importance as new environmental legislation is worked into society. The legislation establishes principles, guidelines and objectives; the regulations provide the means whereby they are to be attained; and enforcement supplies the rigor with which they are implemented. Testing is needed at each point to ensure that legislation, regulations and enforcement are practical, meet the public need and are fair to all. Sometimes these are difficult points to establish when dealing with the relationships between man and his environment.

Perhaps a word of caution is not out of place. Though it may be true that a general consensus has been reached that the environment can be endangered for future generations and that we must take steps to remedy that situation, there has hardly yet been time for a consensus to form either as to how critical the situation is, or more precisely, what steps are demanded and what the priorities for action are.

For this reason it is more than ever critical to involve the public fully in the examination of each identifiable area of concern, and obtain a valid concensus before any specific legislation is initiated.

SUMMARY

In its first year of operation the Environment Conservation Authority has had many specific problems associated with the conservation of the environment drawn to its attention. It has also had many discussions with individuals and organizations making representations on particular problems of importance to the Province. There has also been a tendency in these discussions to stress the need for discovering and placing an emphasis upon the more fundamental aspects of environmental problems and to identify the paths society must follow to work its way into a satisfactory future. A continuing emphasis has been placed in all representations made to the Authority, on the need to seek and maintain a balanced view, and to move forward in a thoughtful way that gives proper consideration to the needs of all the citizens now and for future generations.

In this its first Annual Report to the Lieutenant Governor-in-Council, the Environment Conservation Authority supports the position that the time is opportune to begin to move on broad fronts to achieve a proper balance in our environment now and for the future. The Authority identifies four major elements that need to be developed and woven together to produce the environmental fabric of a secure future. These are environmental education, environmental economics, environmental management and environmental legislation.

ENVIRONMENTAL EDUCATION

The re-adaptations that man must make, now that he has so densely occupied the surface of the earth, require education inputs to give him the skills and the new attitudes that these new circumstances demand. Environmental education is required, both within the school system at all levels from elementary to university, and outside the formal educational structures, in industry, in government and in the public at large.

ENVIRONMENTAL ECONOMICS

Man must both maintain his own livelihood and protect his future. He must maintain a society that functions well and still not imperil his own well-being nor the survival of other living species. Economic analysis of environmental management, including the processes that disturb the environment as well as the disturbances themselves, is an excellent instrument to sharpen up judgment and focus attention on matters of great relevancy. In its essence, environment conservation is an attempt to retain suitable surroundings for living processes, human and non-human, now and for the future. In the economics of living processes, economics and human ecology do not yet combine simply to give easy answers. But that is where the problems are.

ENVIRONMENTAL MANAGEMENT

The stress man places on his environment when he lives in it has clearly led to the need that the results of present actions must be foreseen and suitable preparations made. In its simplest consequence, this means that environmental management must become another of the responsibilities of management itself. Environmental management must be integrated in a regular way into the overall management of man's activities at home, at work and at play.

ENVIRONMENTAL LEGISLATION

Environmental legislation includes the legislation itself, the regulations that amplify and define the legislation, and the enforcement procedures that follow. It is important that the principles and guidelines that establish the objectives men think wise for themselves, be set out as clearly as possible. Since these may deal with most complex situations, and involve individuals and groups at many levels of their life, it is important to retain flexibility and avoid over-regulation in attempting to achieve these objectives. But the goal must be achieved.

CONCLUSION

The Environment Conservation Authority recommends that continuing attention be paid to environmental education, environmental economics, environmental management, and environmental legislation, and to the way these four elements must be integrated with each other to produce a favourable future for all.